Honeywell

T8621A,C,D Chronotherm™ III Fuel Saver Thermostats

The T8621A,C,D Chronotherm III Programmable Fuel Saver Thermostats provide automatic control of single or multistage heating/cooling systems and offer users the highest standard of comfort and convenience available with energy savings.

- Full seven-day program capability; different schedules may be selected for every day.
- Can be programmed in hand (with batteries installed) or on wall to provide up to four temperature settings per day.
- Large digital clock (liquid crystal display) indicates continuous time, day, current period and room temperature.
- Adaptive Intelligent Recovery™ brings room temperature to programmed temperature at programmed time, maximizing comfort and energy savings.
- Temperature control program maintains temperature within 1° F of setpoint.
- Temporary program override available by using—
  —WARMER and COOLER keys
  —SKIP next period key
  —CHANGE to last period key
- HOLD TEMP key provided for indefinite program override (vacation/holiday).
- Installer self-test and time delay override save installation time.
- SYSTEM light-emitting diode (LED) indicates system is energized.
- Models available with automatic or manual heat/cool changeover.
- Batteries included provide power to maintain clock and memory during power failures.
- Switching subbase with wiring terminals included.
- Powered directly from control transformer, requiring an extra (24V) wire to thermostat.
- Fan operation switch included on back of SUPER TRADELINE models to select either independent or direct thermostat control of fan in heating.
- Models available with separate sensor for remote mounting.

CONTENTS

Specifications 2
Ordering Information 2
Selection/Application 5
Installation 7
Checkout 17
Programming the Thermostat 19
Operating the Thermostat 25
Operation 28
Troubleshooting 29
Glossary 30
Table of Contents 31

Specifications

IMPORTANT: *The specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. Also, this product is tested under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.*

SUPER TRADELINE MODEL

SUPER TRADELINE controls, see Table 1, offer features not available on TRADELINE models and are designed to replace a wide range of Honeywell and competitive controls.

SUPER TRADELINE FEATURE: Fan operation switch on back of thermostat to select either independent or direct thermostat control of fan in heating.

TRADELINE MODELS

TRADELINE models, see Table 2, are selected and packaged to provide ease of stocking and handling and also maximum replacement value.

LIGHT-EMITTING DIODE (LED): SYSTEM LED lights during thermostat ON cycle.

VOLTAGE RATING: 15 to 30 Vac.

TABLE 1—SUPER TRADELINE MODEL.

Thermostat Model Number	Stages		Changeover Type	Switching		Application
	Heat	Cool		System	Fan	
T8621D	2	2	Manual	HEAT-OFF-COOL	ON-AUTO	Multistage

Ordering Information

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE Catalog or price sheets for complete ordering number, or specify—

1. Model number; SUPER TRADELINE, if desired.
2. Number of heat and cool stages desired.
3. System, fan switching desired.
4. Remote temperature sensing, if desired.
5. Application.

If you have additional questions, need further information or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Satisfaction
   Honeywell Inc., 1885 Douglas Drive North
   Minneapolis, Minnesota 55422-4386 (612) 951-1000

   In Canada—Honeywell Limited/Honeywell Limitee, 740 Ellesmere Road, Scarborough, Ontario M1P 2V9. International Sales and Service offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

TABLE 2—TRADELINE MODELS.

Thermostat Model Number	Stages		Changeover Type	Switching		Application
	Heat	Cool		System	Fan	
T8621A*	1	1	Auto	HEAT-AUTO-COOL-OFF	ON-AUTO	Single stage
T8621C	2	1	Auto	HEAT-AUTO-COOL-OFF	ON-AUTO	Multistage
T8621D*	2	2	Auto	HEAT-AUTO-COOL-OFF	ON-AUTO	Multistage

*Model available with separate sensor for remote mounting.

CURRENT RATING: 1.6A maximum total per stage.

OPERATING HUMIDITY RANGE: 5 to 90 percent relative humidity, noncondensing.

OPERATING AMBIENT TEMPERATURE RANGE: 40° F to 110° F [4° C to 43° C].

SETPOINT RANGE: 45° F to 88° F [7° C to 31° C].

CALIBRATION: Self-calibrating thermostat and thermometer to ±1° F.

SHIPPING TEMPERATURE: -20° F to +120° F [-29° C to +49° C].

CYCLES PER HOUR ADJUSTMENT:

Heating: First stage of 2-stage heat models—fixed at 3 cph. Second stage of 2-stage heat models or heat stage of single-stage heat models—factory-set at 6 cph; adjustable for other systems.

Cooling: Factory-set at 3 cph (not field adjustable); minimum off-time of five minutes.

FINISH: Beige matte with decorative brushed metal faceplate.

DIMENSIONS: Thermostat (mounted on subbase)—7 in. [178 mm] long, 5-5/16 in. [135 mm] high, 1-3/4 in. [44 mm] deep. See Fig. 1 for subbase dimensions and Fig. 2 for sensor dimensions.

TYPICAL KEYPAD: See Fig. 3.

ACCESSORIES:

TG586A Locking Cover.

TG512 Versaguard Universal Thermostat Guard.

REPLACEMENT PARTS:

202905AA Remote Temperature Sensor Assembly. Includes sensor, screws, anchors and instructions. See Fig. 2 for dimensions.

Fig. 1—T8621 Subbase mounting dimensions in in. [mm].

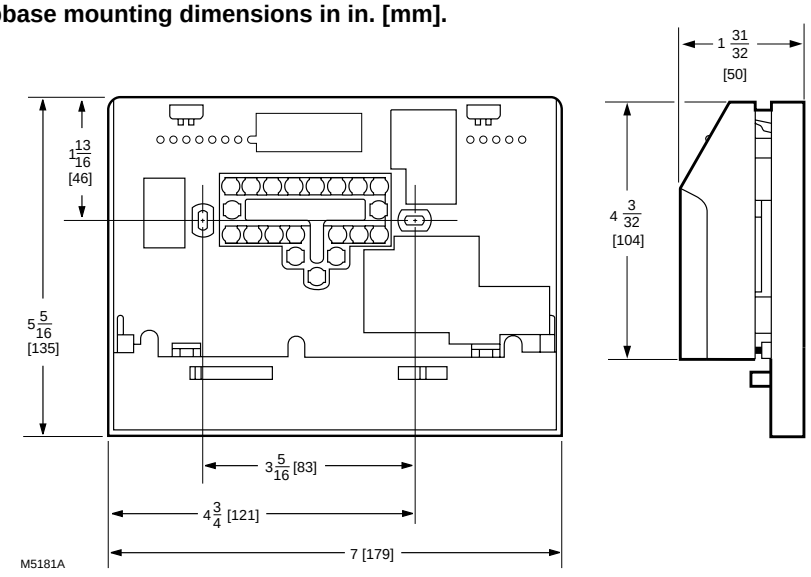


Fig. 2—202905AA Remote Temperature Sensor dimensions in in. [mm].

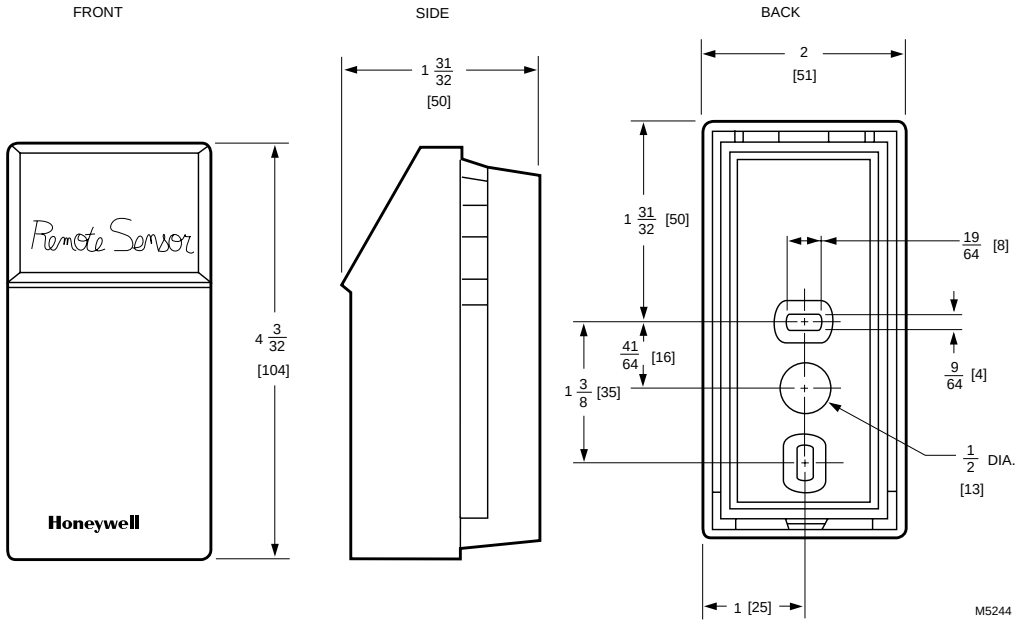
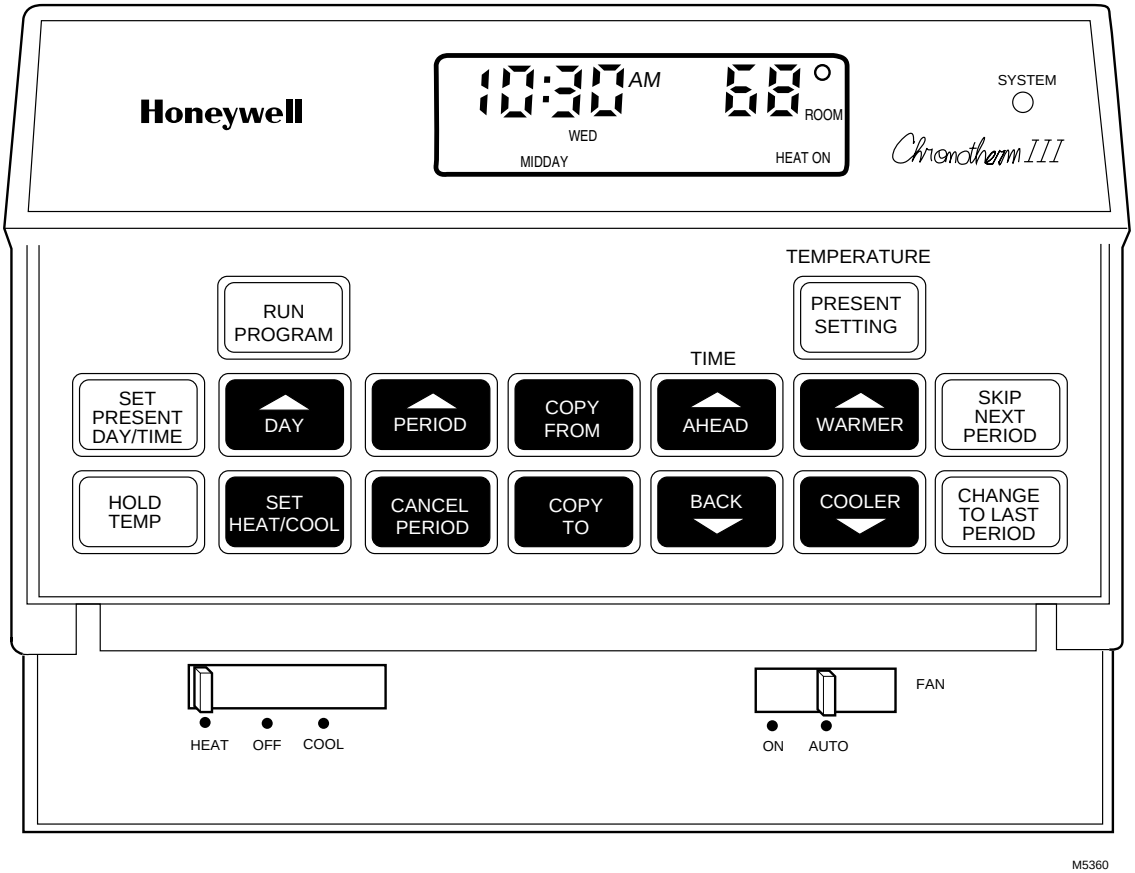


Fig. 3—Typical thermostat keypad.



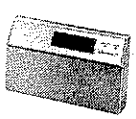
Selection/Application

The T8621 Thermostat uses the latest microelectronic design and control technology to provide home and building owners with the highest level of comfort available and optimal energy savings in a package that is easy to use and easy to live with.

The following section is a guide to selection and application of the best thermostat to meet individual needs.

PROGRAMMING

Does the thermostat selected accommodate the customer's daily schedule, lifestyle or work schedule? Refer to choices below.

Device	Programming	Daily Temperature Selection
T8621A,C,D	7-day (each day different)	4 heat and 4 cool
T8600,01,02,03* 	5-1-1 (Mon-Fri, Sat, Sun)	4 heat and 4 cool

*Model not currently available to control multistage equipment.

IF NEW CONSTRUCTION APPLICATION, CONSIDER

- Equipment type (see manufacturer's specifications)
  - —Staging required
  - —System switching required
  - —Fan switching required
- Control wiring—number of conductors required to operate equipment and thermostat.

IMPORTANT: *The T8621 requires an additional conductor to transformer common to provide continuous 24V power for thermostat operation.*

IF RETROFIT/REPLACEMENT APPLICATION, CONSIDER

- Equipment requirements
  - —Staging (heat stages, cool stages)
  - —System switching (manual: HEAT-OFF-COOL; automatic: HEAT-AUTO-COOL-OFF). Emergency heat for heat pump application not provided on T8621.
  - —Fan switching; does fan come on automatically from thermostat on cooling only (typical gas/oil heating), or on call for cool and heat (typical electric heat with single speed fan)?
- Existing wiring
  - —Are there enough conductors to operate the equipment and the thermostat? Can a new cable be pulled?

IMPORTANT: *The T8621 requires an additional conductor to transformer common to provide continuous 24V power for thermostat operation.*

- Existing thermostat
  - —For a guide for replacing popular Honeywell standard nonprogrammable thermostats with a T8621, see Table 3.

SECURITY

Does the thermostat selected provide access to programmming and the override features that will best suit the application? Refer to choices below.

Access	Typical Application	Device
Free access to programming and adjustment/ override.	Home or owner-occupied commercial building	T8621A,C,D
Restricted access to device.	Public building	T8621 with TG512 Locking Guard or TG586A Locking Cover; T8621 with remote temperature sensor.

SINGLE-STAGE HEAT PUMPS

If home/building owner has a single-stage heat pump, one option is to use a T8621C or D (see Figs. 11-13).

The T8621C is a two-stage heating, one-stage cooling programmable thermostat. The T8621D is a two-stage heating, two-stage cooling programmable thermostat. What both thermostats have in common is separate W1 and W2 (first and second stage heat) terminals. In both cases, the W1 can be used for changeover in heating.

For single-stage compressor applications (both first-stage heating and first-stage cooling energized through the Y terminal), simply jumper Y1 and W2.

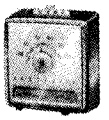
Note that the recovery algorithm of the T8621 may cause the compressor to cycle on and off during recovery.

Although the cycle rate for the first stages of heat and cool are set for hot water systems, the second stage of the T8621 must be adjusted. Turn the cycle rate adjustment screws to the hot water setting on both the T8621C and D to achieve the cycle rate appropriate for heat pumps.

If changeover is utilized in the cooling mode, apply a normally closed relay as shown in Fig. 12.

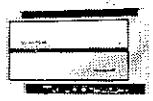
The above application should be used *only* on single-stage heat pumps.

TABLE 3—T8621 THERMOSTATS RECOMMENDED TO REPLACE T874, T872, OR T870 MODELS.

Stages		Thermostat (Subbase Included)	Thermostat	Subbase	Thermostat	Subbase	 Thermostat	Subbase
Heat	**Cool**	**T8621**	**T874**	**Q674**	**T872**	**Q672**	**T870**	**Q412**
1	1	A7002 A7010 (° C) A7044[h]	A1002 A1010[d] A1036 A1150 A1226 (° C) A1176[e]	A1001 A1019 C1009[g] D1008 D1040 E1007[g] E1049[g] G1005 G1021[g] G1070[g]	A1006 A1014[d] A1030 A1048 A1238 (° C) A1246[d] A1261[e] A1345 (° C)	A1005 A1013 C1003 D1002 E1001 E1050 E1126 G1009 G1025[g]	A1000 A1018 A1042[d] A1059 A1307 A1315[d] A1323 A1331[d]	A1006 A1113 C1004 D1003 E1002 G1000
		D7022[a]		B1000 B1034 B1075		B1004 B1038 B1079		B1005 B1070 B1146
1	2	D7006[a] D7014 (° C)[a] D7097[a,h]	B1001 B1019 B1068 (° C)	A1001 A1019 C1009[g] D1008 D1040 E1007[g] E1049[g] G1005 G1021[g] G1070[g]	B1005 B1013 B1021	A1005 A1013 C1003 D1002 E1001 E1050 E1126 G1009 G1025[g]	B1009 B1017 B1033 B1066[e] B1074 B1132	A1006 A1113 C1004 D1003 E1002 G1000
		D7022[a]		B1000 B1034 B1075		B1004 B1038 B1079		B1005 B1070 B1146
2	1	C7008 C7016 (° C)	C1000 C1018 C1125[f] C1141[e] C1240 (° C)	A1001 A1019 C1009[g] D1008 D1040 E1007[g] E1049[g] G1005 G1021[g] G1070[g]	C1004 C1012 C1020[d] C1038 C1087 C1350 (° C) C1368[f] C1392 C1400[e] C1566 (° C)	A1005 A1013 C1003 D1002 E1001 E1050 E1126 G1009 G1025[g]	C1008 C1024 C1040 C1156[e] C1164 C1214 C1370 C1388	A1006 A1113 C1004 D1003 E1002 G1000
		D7022[a]		B1000 B1034 B1075		B1004 B1038 B1079		B1005 B1070 B1146
2	2	D7006 D7014 (° C) D7097[a,h]	D1009 D1017 D1132 (° C) D1165 D1223 (° C) D1231[f]	A1001 A1019 C1009[g] D1008 D1040 E1007[g] E1049[g] G1005 G1021[g] G1070[g]	D1003 D1011 D1276 (° C) D1300 D1383 (° C)	A1005 A1013 C1003 D1002 E1001 E1050 E1126 G1009 G1025[g]	D1007 D1015 D1023 D1106[d] D1114 D1239 D1247	A1006 A1113 C1004 D1003 E1002 G1000
		D7022		B1000 B1034 B1075		B1004 B1038 B1079		B1005 B1070 B1146

(continued)

TABLE 3—T8621 THERMOSTATS RECOMMENDED TO REPLACE T874, T872, OR T870 MODELS *(Continued)*.

Stages		Thermostat (Subbase Included)	Thermostat	Subbase	 Thermostat	Subbase	Thermostat	Subbase
Heat	**Cool**	**T8621**	**T874**	**Q674**	**T872**	**Q672**	**T870**	**Q412**
0	2	D7006[b] D7014 (° C)[b] D7097[b,h]	E1008 E1016 E1107 (° C)	D1008 D1040 G1005 G1021[g] G1070[g]	E1002 E1010 E1150 (° C)	D1002 G1009 G1025[g]	E1006 E1014 E1030	D1003 G1000
2	0	C7008[c] C7016 (° C)[c]	F1007 F1015 F1114 (° C)	D1008 D1040 G1005 G1021[g] G1070[g]	F1001 F1019 F1100 (° C)	D1002 G1009 G1025[g]	F1005 F1054 F1120	D1003 G1000

[a] Disregard unused second stage terminals on T8621 replacement.
[b] Disregard heating system switch positions and wiring terminals W1-W2 on T8621 replacement. Jump RC-RH for thermostat power.
[c] Disregard cooling system switch position and wiring terminal Y1 on T8621 replacement. Jump RC-RH if manual fan control (G terminal) is desired.
[d] Temperature restriction and/or locking cover provided with T874/T872/T870; accessory TG501 Locking Guard may be used with T8621 replacement.
[e] Device built to DoD specifications; accessory TG501 Locking Guard may be used with T8621 replacement.
[f] 12° F heating interstage differential to provide night setback; T8621A7002 replacement sets back first stage automatically.
[g] O-B changeover terminals not provided on T8621 replacement.
[h] Includes separate sensor for remote temperature sensing.

Installation

COMPATIBILITY

The T8621 Thermostats will replace most heating/cooling system thermostats. As long as ac power is continuously available to the transformer, the thermostat will be compatible with any low-volt control system.

IMPORTANT: *The T8621 requires on additional conductor to transformer common to provide continuous 24V power for thermostat operation.*

WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Allow thermostat to warm to room temperature before operating.
5. After installation is complete, check out product operation as provided in these instructions.

⚠ *CAUTION*

Disconnect power supply to prevent electrical shock or equipment damage.

LOCATION

Thermostat with Integral Sensor

Install thermostat and subbase about 5 ft. [1.5 m] above the floor in an area with good air circulation at room temperature.

Do not install thermostat where it may be affected by—
- — drafts or dead spots behind doors, in corners or under cabinets.
- — hot or cold air from ducts.
- — radiant heat from sun or appliances.
- — concealed pipes and chimneys.
- — unheated (uncooled) areas behind the thermostat, such as an outside wall.

Thermostat with Remote-Mounted Sensor

Install thermostat in an area that is accessible for setting and adjusting the temperature and settings.

Install remote temperature sensor in an area with good air circulation at average temperature.

Do not install the sensor where it may be affected by—

— drafts or dead spots behind doors, in corners, or under cabinets.

— hot or cold air from ducts.

— radiant heat from sun or appliances.

— concealed pipes and chimneys.

— unheated (uncooled) areas behind the sensor such as an outside wall.

IF REPLACING AN EXISTING THERMOSTAT

Turn off thermostat power at furnace or boiler. A two-transformer system may require turning off two switches or disconnects. Remove any existing wallplate or subbase from wall. To avoid miswiring later, label or write down each wire color with the letter or number on the wiring terminal as the wire is removed.

IF NEW INSTALLATION

Run cable to a hole at the selected wall location for the thermostat, and pull about 3 in. [76 mm] of wire through the opening. Color-coded, 18-gauge thermostat cable with at least one conductor for each wiring terminal is recommended. Good service practice recommends selecting cable with one or two more conductors than the immediate application requires.

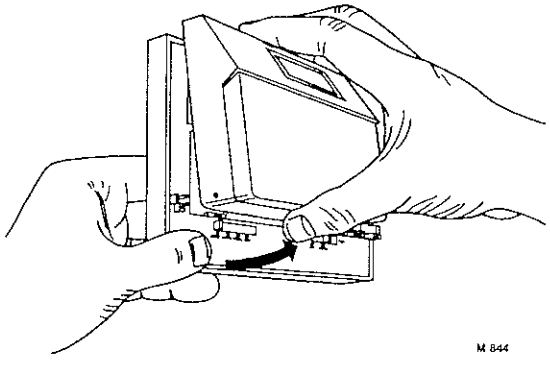
If using thermostat model with remote temperature sensing, run 3-wire, 18-gauge thermostat cable from the thermostat location to the sensor location (200 ft. [61 m] maximum). Route cable away from sources of electrical noise.

MOUNTING SUBBASE

IMPORTANT: *Set the system switch to the OFF position before mounting.*

NOTE: The subbase does not require leveling for proper operation, but for appearance only.

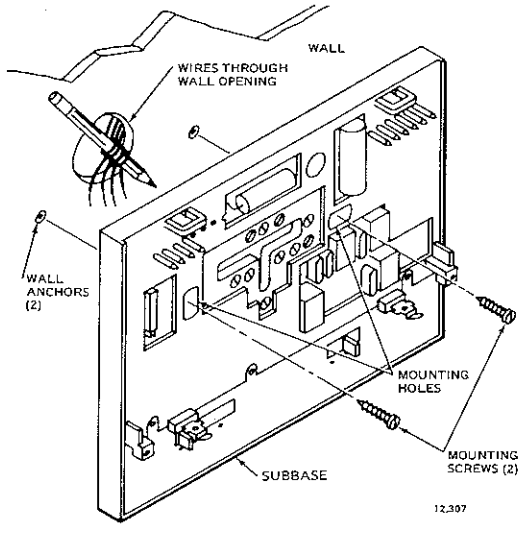
Fig. 4—Removing thermostat from subbase.



Remove thermostat from subbase (Fig. 4).

The subbase mounts directly onto the wall with the screws and anchors included. If drywall construction, plastic anchors must be used; use the subbase as a template, and with a pencil, mark the two mounting screw positions (Fig. 5). Use 3/16 in. bit to drill holes for anchors. Gently tap anchors into holes until they are flush with the wall surface. Thread wires through the center opening of the subbase. Then, mount the subbase using two screws provided. Gently tighten screws, level top surface of subbase, and securely tighten screws.

Fig. 5—Mounting subbase on wall.

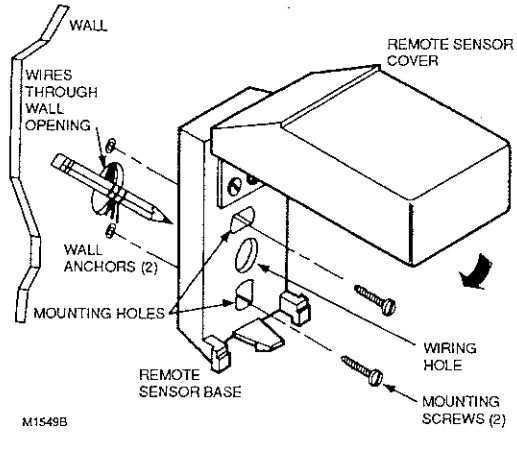


MOUNTING REMOTE TEMPERATURE SENSOR (IF APPLICABLE)

The remote sensor mounts directly on the wall with screws and anchors included. Remove cover from remote sensor (Fig. 6). Use the remote sensor base as a template, and with a pencil, mark holes for mounting screws.

Use a 3/16 in. bit to drill the required holes. Gently tap anchors into holes until they are flush with the wall surface. Thread wires through the opening in the base. Mount remote sensor base using the screws provided. See Fig. 6. Make sure base looks level before tightening screws.

Fig. 6—Mounting remote sensor base on wall.



WIRING

All wiring must comply with local electrical codes and ordinances.

Disconnect power before wiring to prevent electrical shock or equipment damage.

The shape of the terminal barrier permits insertion of straight or conventional wraparound wiring connections. Either method is acceptable.

Push excess wire back into the hole, and plug hole with nonhardening caulk, putty or insulation to prevent drafts from affecting thermostat operation.

NOTE: Restrict wiring to recessed area surrounding terminals (Fig. 7) to assure thermostat/subbase contact.

Refer to Figs. 8-14 for typical hookups of subbase and thermostat.

Fig. 7—Restrict wiring to recessed area surrounding terminals.

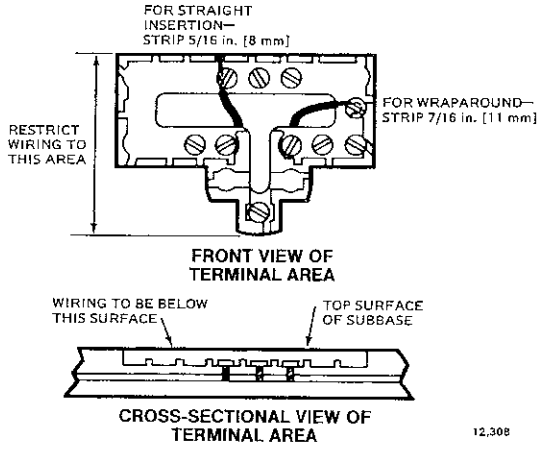
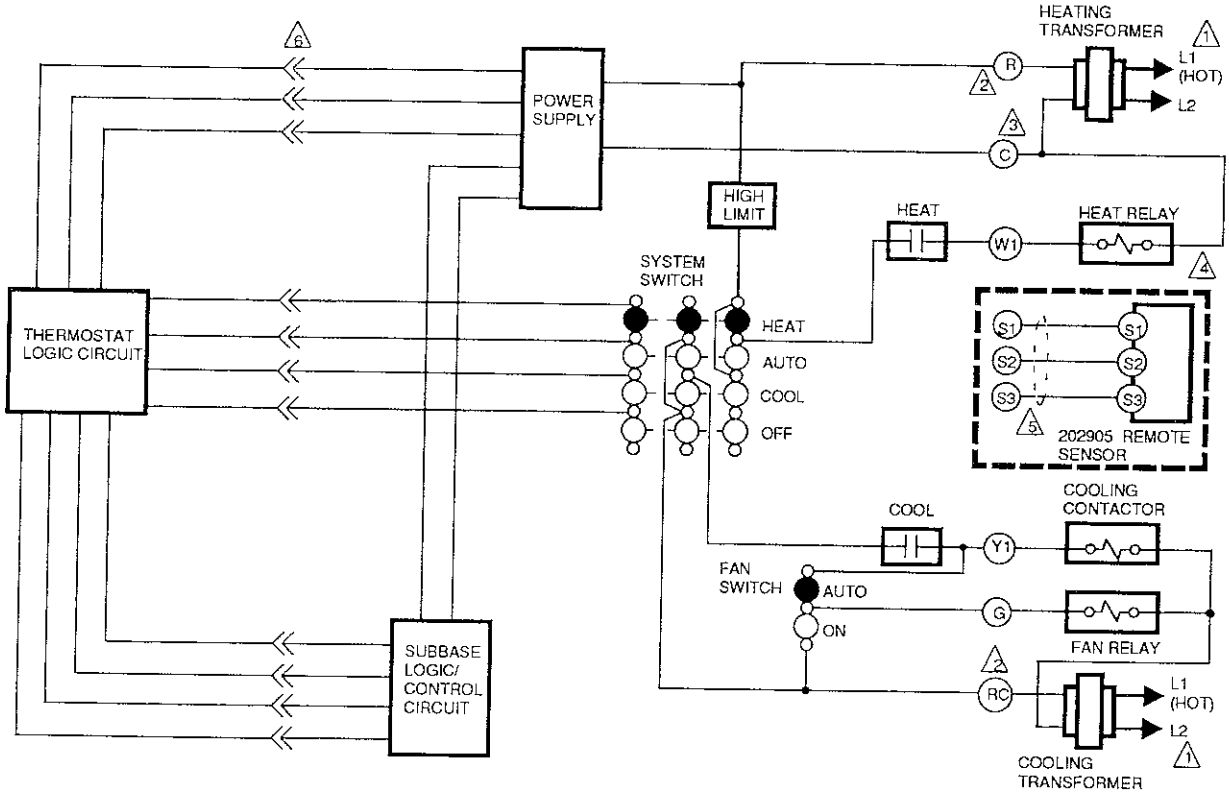
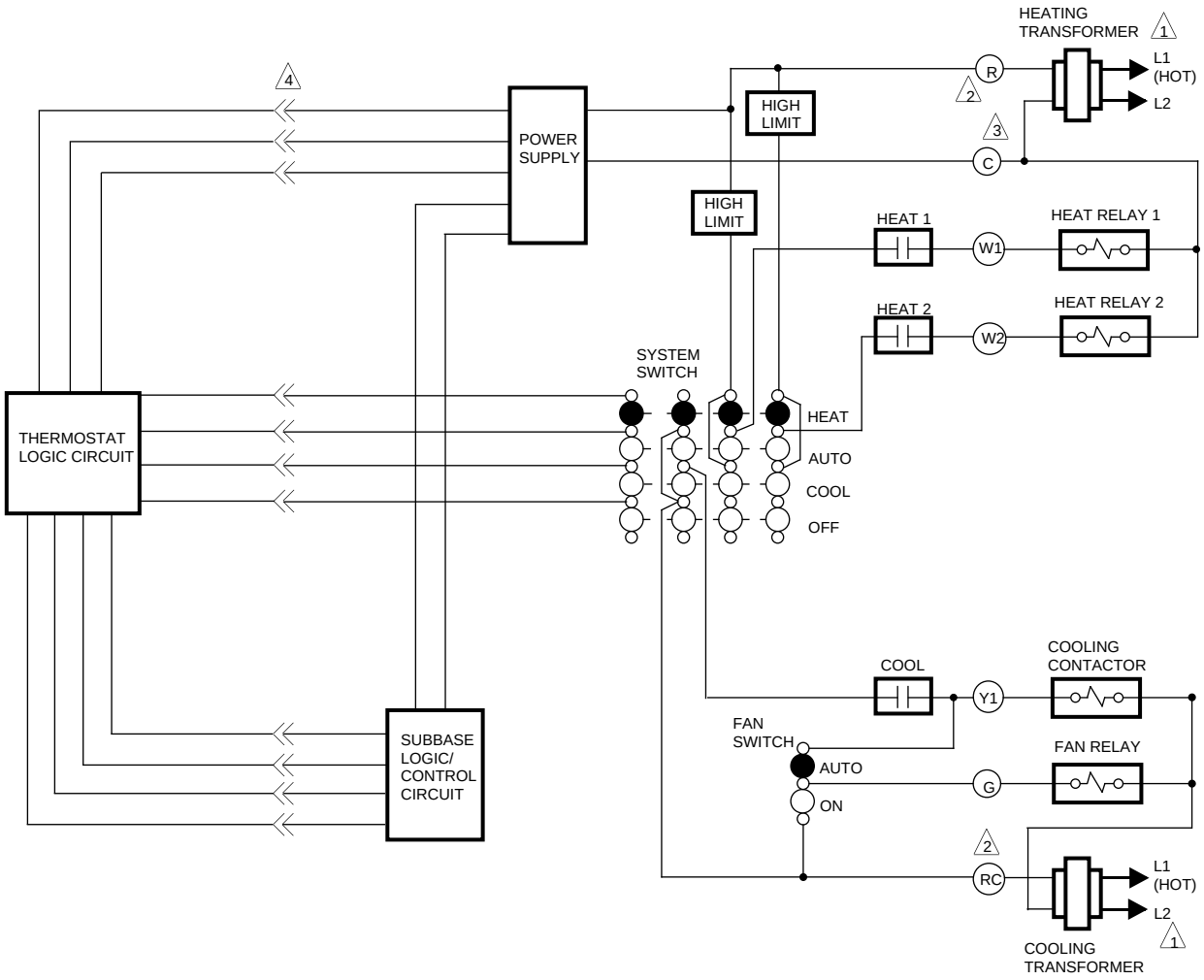

FOR STRAIGHT INSERTION— STRIP 5/16 in. [8 mm]
FOR WRAPAROUND— STRIP 7/16 in. [11 mm]
RESTRICT WIRING TO THIS AREA
FRONT VIEW OF TERMINAL AREA
WIRING TO BE BELOW THIS SURFACE
TOP SURFACE OF SUBBASE
CROSS-SECTIONAL VIEW OF TERMINAL AREA
12,308

Fig. 8—T8621A 1-stage heat/1-stage cool thermostat with HEAT-AUTO-COOL-OFF system and AUTO-ON fan switching.



1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. FOR SINGLE TRANSFORMER SYSTEM JUMPER R AND RC.
3. NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C FOR THERMOSTAT OPERATION.
4. APPLICABLE ONLY ON MODEL WITH REMOTE SENSOR.
5. RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.
6. ——≪—— DENOTES THERMOSTAT TO SUBBASE INTERCONNECT.

Fig. 9—T8621C 2-stage heat/1-stage cool thermostat with HEAT-AUTO-COOL-OFF system and AUTO-ON fan switching.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

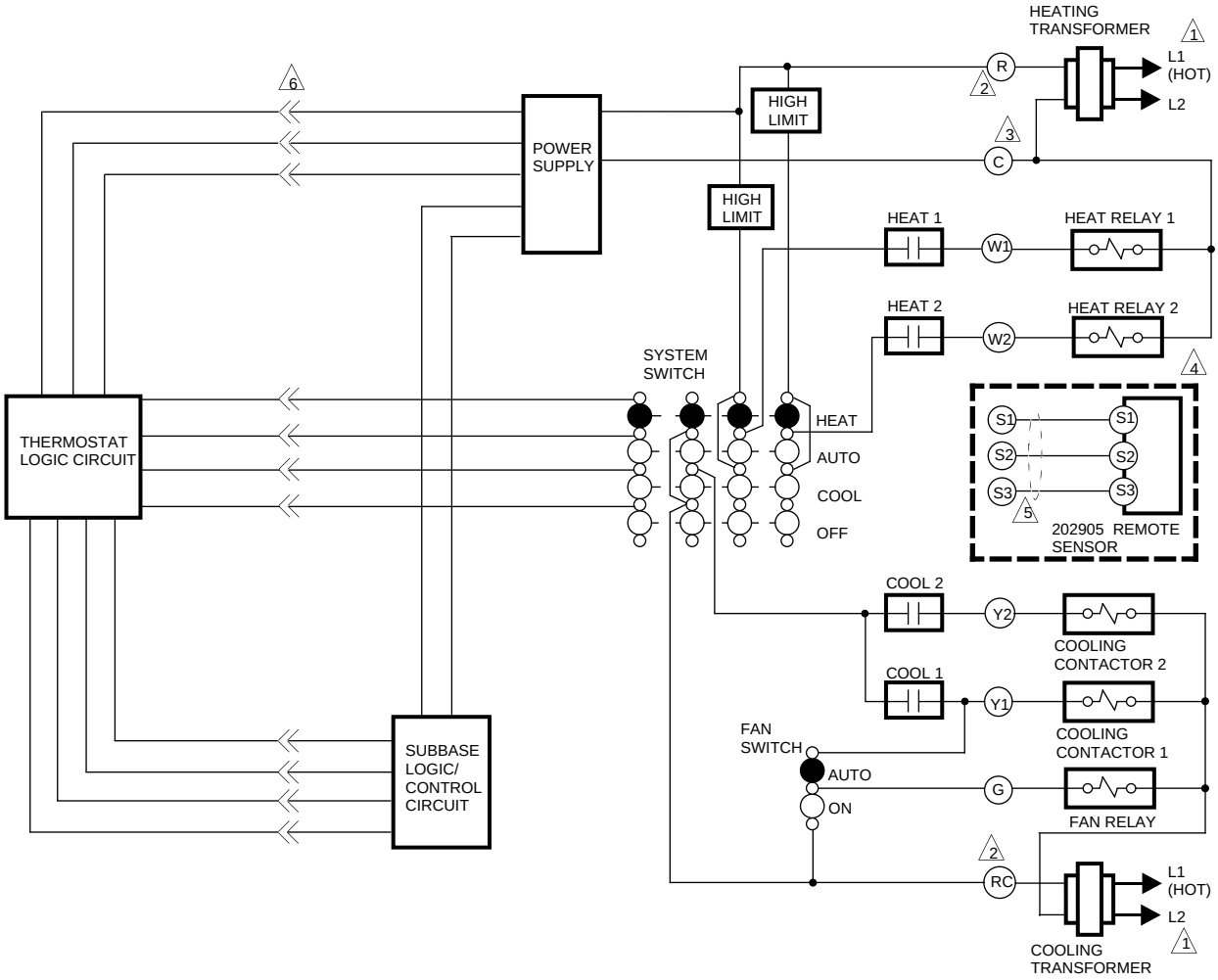
2 FOR SINGLE TRANSFORMER SYSTEM JUMPER R AND RC.

3 NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C FOR THERMOSTAT OPERATION.

4 DENOTES THERMOSTAT TO SUBBASE INTERCONNECTION.

M5233

Fig. 10—T8621D 2-stage heat/2-stage cool thermostat with HEAT-AUTO-COOL-OFF system and AUTO-ON fan switching.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 FOR SINGLE TRANSFORMER SYSTEM JUMPER R AND RC.

3 NOMINAL 24 Vac POWER MUST BE PRESENT BETWEEN R AND C FOR THERMOSTAT OPERATION.

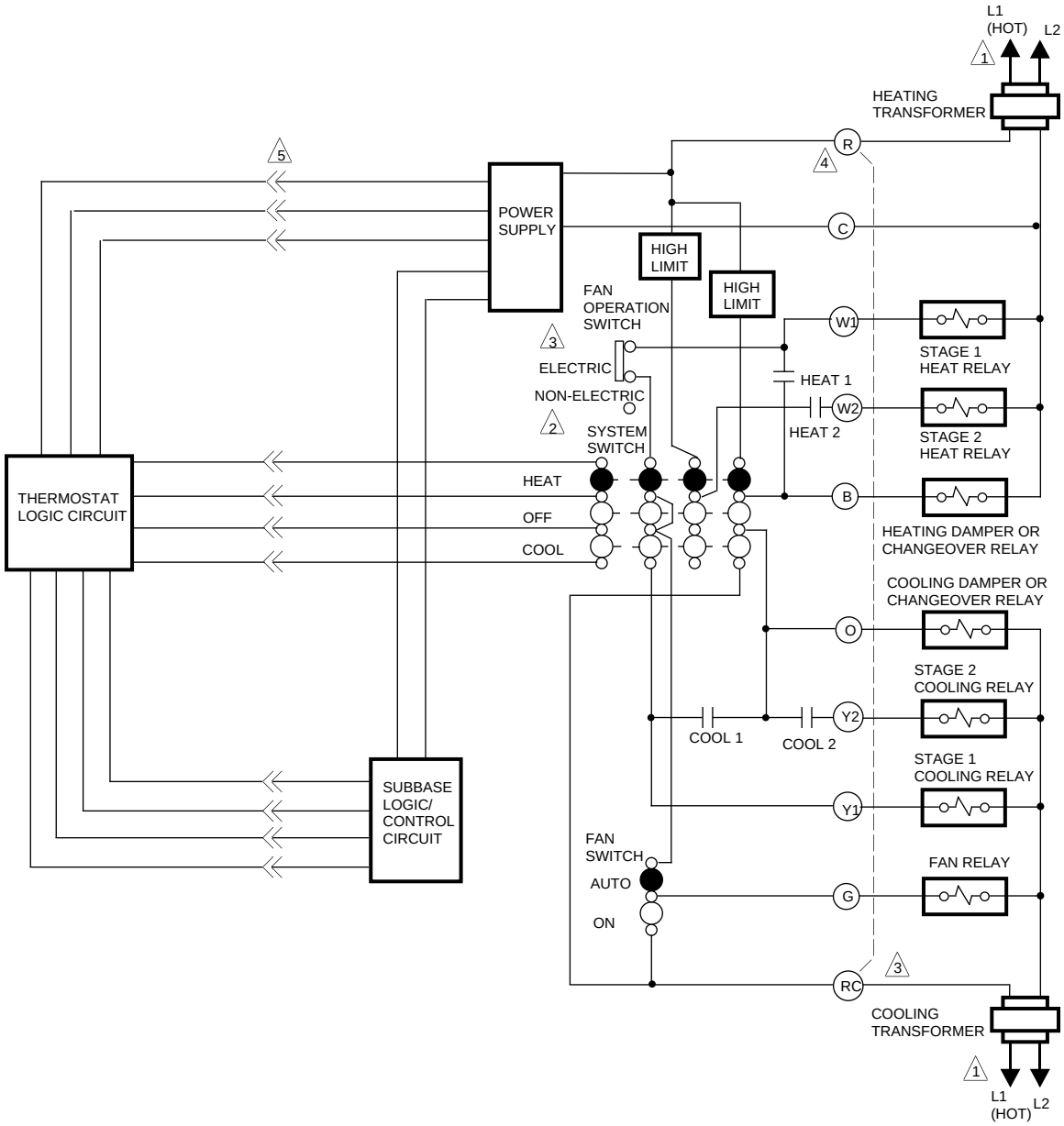
4 APPLICABLE ONLY ON T8621D MODEL WITH REMOTE SENSOR.

5 RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.

6 ——<<—— DENOTES THERMOSTAT TO SUBBASE INTERCONNECTION.

M1031E

Fig. 11—T8621D 2-stage heat/2-stage cool thermostat with HEAT-OFF-COOL system and AUTO-ON fan switching; auto fan on heat and cool; convertible to auto fan on cool only.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 FOR GAS OR OIL APPLICATIONS OR ELECTRIC HEAT APPLICATIONS WHERE THE FAN OPERATION IS CONTROLLED INDEPENDENTLY OF THE THERMOSTAT (AUTO FAN OPERATES WITH Y1 ONLY), TWO TRANSFORMERS MAY BE USED. SET SWITCH TO NON-ELECTRIC POSITION.

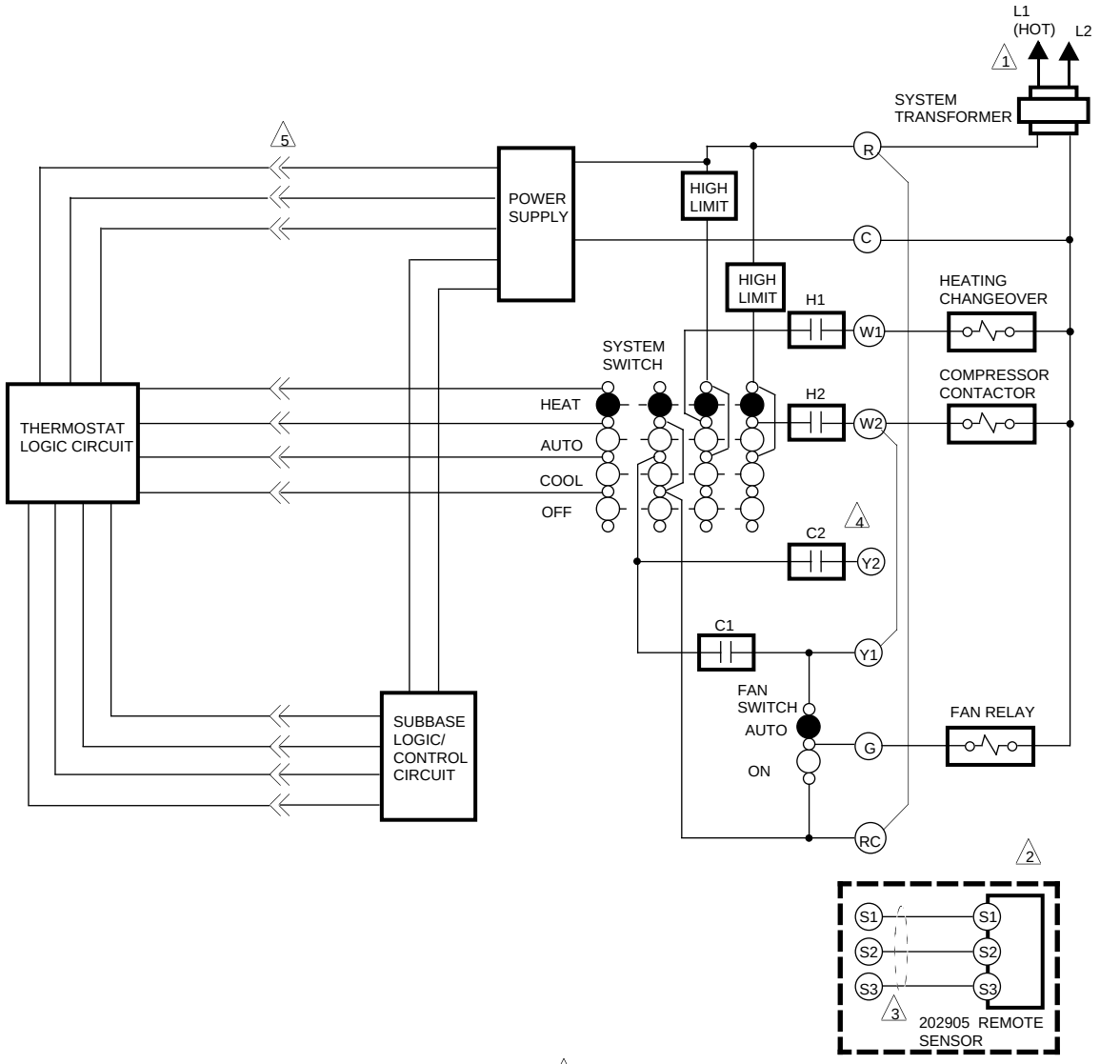
3 FOR ELECTRIC HEAT APPLICATIONS (AUTO FAN OPERATES WITH W1 AND Y1). USE ONLY ONE TRANSFORMER; JUMPER R AND RC. SET SWITCH TO ELECTRIC POSITION.

4 NOMINAL 24 VAC POWER MUST BE PRESENT BETWEEN R AND C FOR THERMOSTAT OPERATION.

5 DENOTES THERMOSTAT TO SUBBASE INTERCONNECTION.

M1016C

Fig. 12—T8621C,D single stage heat pump with heating changeover. HEAT-AUTO-COOL-OFF system and AUTO-ON fan switching.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 APPLICABLE ONLY ON T8621 MODEL WITH REMOTE SENSOR.

3 RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.

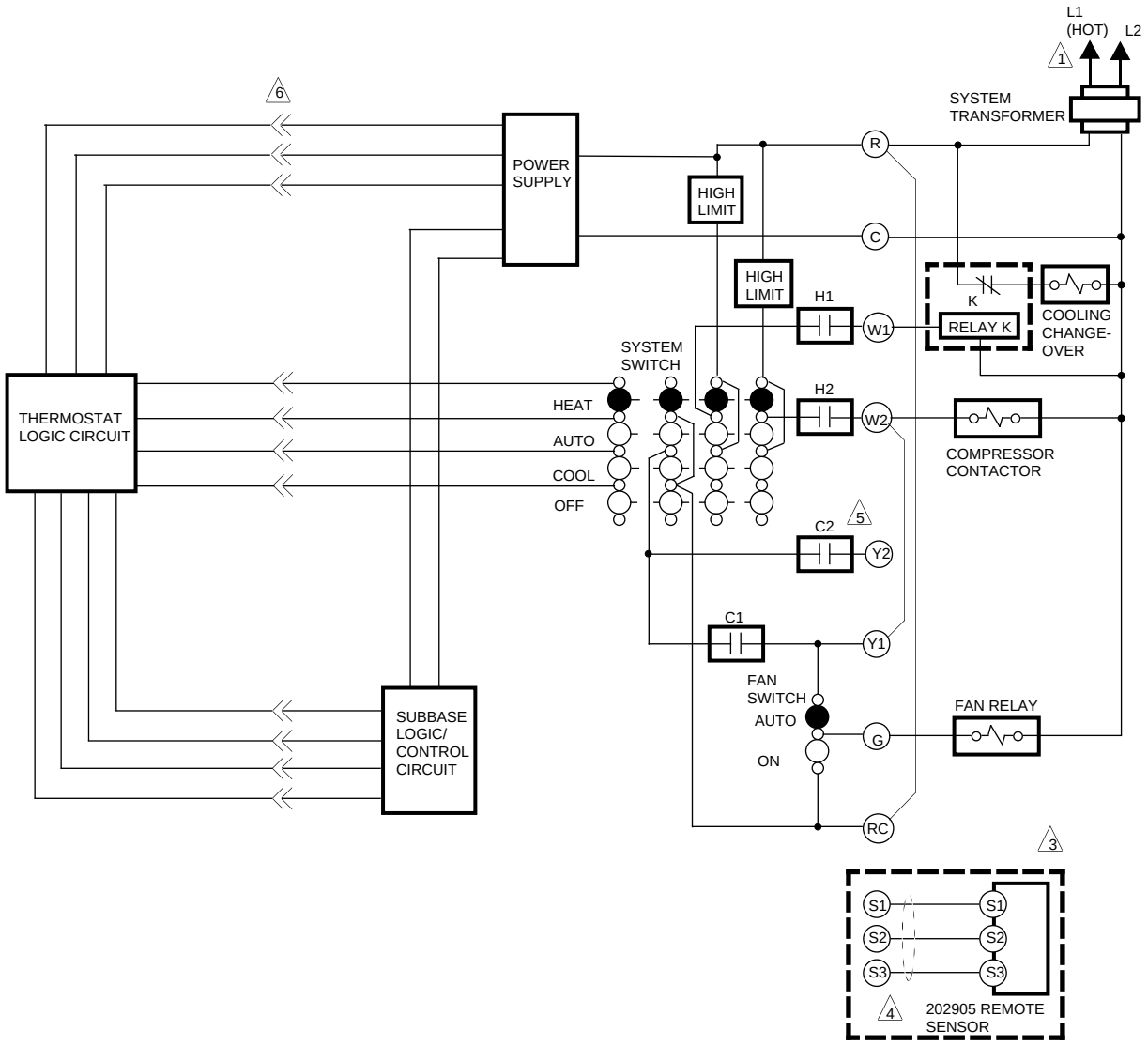
4 T8621D ONLY.

5 DENOTES THERMOSTAT TO SUBBASE CONNECTIONS.

NOTE: SET CYCLE RATE TO HOT WATER SETTING (3 cph). THERMOSTAT DOES NOT PROVIDE MINIMUM OFF TIME IN HEATING.

M1547C

Fig. 13—T8621C,D single stage heat pump with cooling changeover. HEAT-AUTO-COOL-OFF system and AUTO-ON fan switching.



1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

2 ADD RELAY (SPDT) TO ACCOMMODATE COOLING CHANGEOVER.

3 APPLICABLE ONLY ON T8621D MODELS WITH REMOTE SENSOR.

4 RECOMMENDED INTERCONNECT CABLE: 18-GAUGE THERMOSTAT CABLE, 200 ft. [61 m] MAXIMUM LENGTH. ROUTE INTERCONNECT CABLE AWAY FROM SOURCES OF ELECTRICAL NOISE.

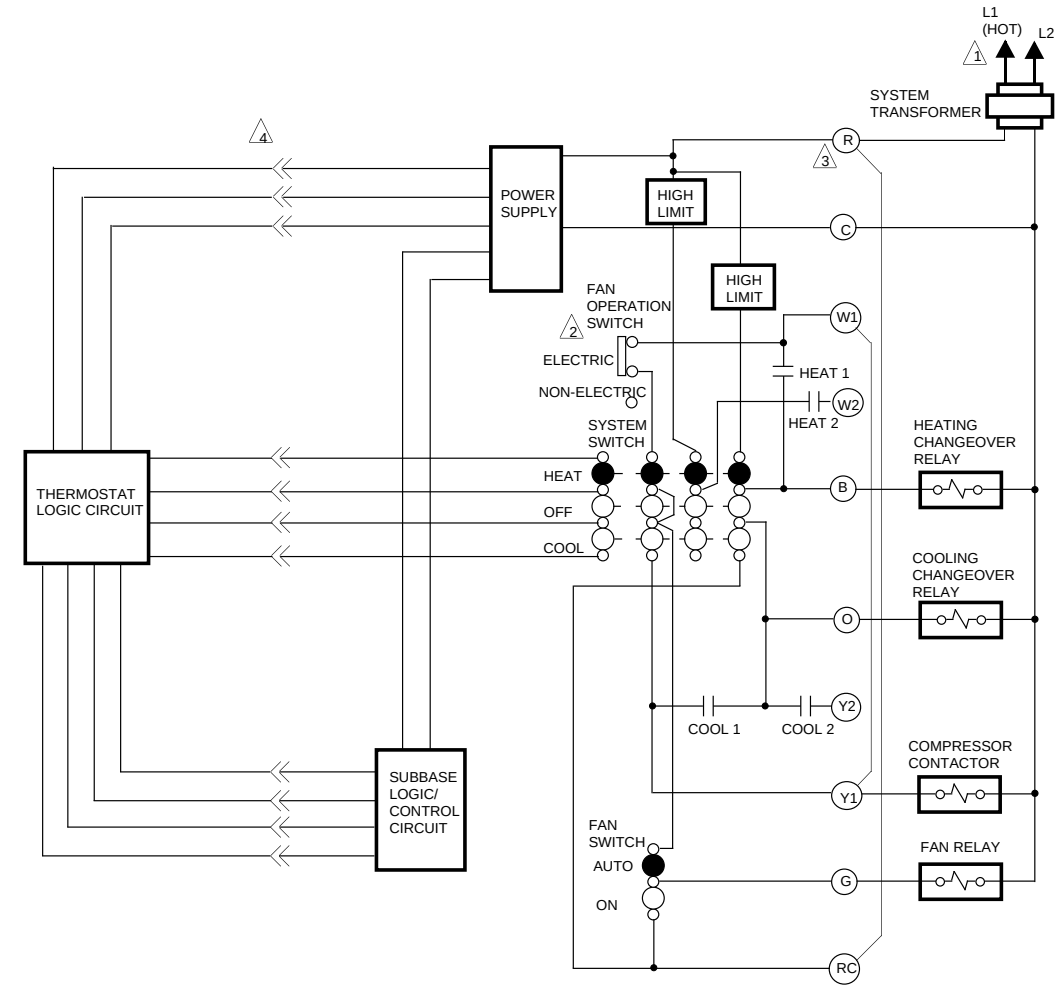
5 T8621D ONLY.

6 DENOTES THERMOSTAT TO SUBBASE INTERCONNECTION.

NOTE: SET CYCLE RATE TO HOT WATER SETTING (3 cph). THERMOSTAT DOES NOT PROVIDE MINIMUM OFF TIME IN HEATING.

M1548C

Fig. 14—T8621D single stage heat pump. HEAT-OFF-COOL system and AUTO-ON fan switching.



Refer to Figs. 8-14 for typical hookups of subbase and thermostat.

ADJUSTING CYCLE RATE

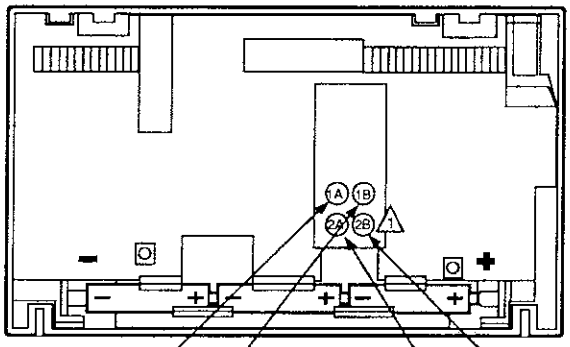
To customize the thermostat cycling performance to various types of heating equipment, cycle rate adjustment screws are provided on the back of the thermostat to provide optimum room temperature control.

NOTE: Most applications will *not* require a change in cycle rate.

The room air temperature will normally vary slightly from the comfort temperature setting with the cycling of the fur-nace or air conditioner.

The cooling cycle rate is factory-set and cannot be adjusted. The heating cycle rate can be adjusted by turning one or both cycle rate adjustment screws located on the back of the thermostat. In multistage heat systems, the cycle rate adjustment applies to the highest stage of heat only. Screws should be backed out about one-half to one turn, or be turned in until tight. See Fig. 15.

Fig. 15—Cycle rate adjustment.



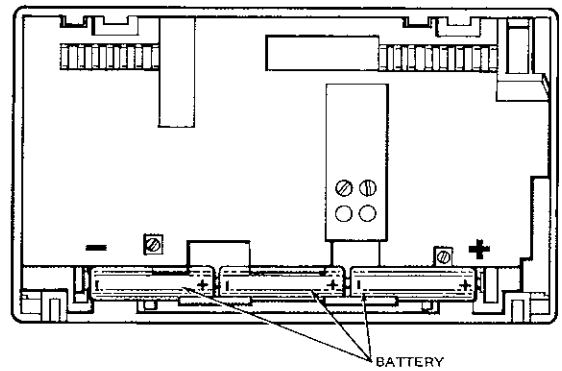
SYSTEM	1A	1B	CYCLES PER HOUR
GRAVITY AIR/WATER	OUT 1/2 TO 1 TURN	OUT 1/2 TO 1 TURN	1
HOT WATER	OUT 1/2 TO 1 TURN	IN	3
GAS/OIL WARM AIR	IN (FACTORY SETTING)	IN	6
ELECTRIC WARM AIR	IN	OUT 1/2 TO 1 TURN	9

TIME/TEMP DISPLAY	2A	2B
24 HR	IN	—
12 HR	OUT 1/2 TO 1 TURN	—
°C	—	IN
°F	—	OUT 1/2 TO 1 TURN

⚠1 SCREWS 2A, 2B AVAILABLE ON SOME MODELS ONLY.

M311A

Fig. 16—Battery placement.



FAN OPERATION OPTION SWITCH

SUPER TRADELINE models include a fan operation option switch on the subbase, visible before the thermostat is mounted on the subbase. The switch should be in electric heat position for electric heating systems that do not have independent fan control.

INSTALLING BATTERIES

Three AAA alkaline batteries are included to provide backup to prevent program loss in case of power outage. Install batteries in back of thermostat as shown in Fig. 16.

Without battery backup, the program will remain about 30 seconds in event of power loss.

IMPORTANT: *When batteries are first installed, the display will flash 1:00 PM and 32°. The temperature will stay at 32° F until the thermostat is powered from the system wiring.*

When the batteries are low, the display will flash REPL BAT. Homeowner will have 20-30 seconds to install new batteries after removing old batteries from back of thermostat. After 20-30 seconds, it will be necessary to reprogram. REPL BAT indication will disappear when thermostat is mounted back on the subbase.

IMPORTANT: *For proper thermostat operation, always replace dead batteries with new alkaline batteries.*

If batteries are completely dead, the display will go blank when the thermostat is removed from the subbase. After replacing the batteries, reprogramming will be necessary.

POWER OUTAGES

Backup batteries will hold the programming and keep the display on during most power outages. Once the power is restored, the system will resume normal operation.

If the display goes off when power is lost, either the backup batteries need to be replaced or are not installed. When power is restored, the display will flash 1:00 PM as a reminder to reprogram.

MOUNTING THE THERMOSTAT

With system switch set to OFF, hang the thermostat on the tabs at the top of the subbase (Fig. 17A). Swing down and press on lower edge until thermostat snaps in place (Fig. 17B). Open cover and tighten the captive mounting screws (Fig. 17C).

SETTING DAY AND TIME

Restore 24V power to the thermostat. When power is applied to the thermostat, the display will read 1:00 PM and room temperature. It will go off for a few seconds, then begin to flash on and off. Set present day and time.

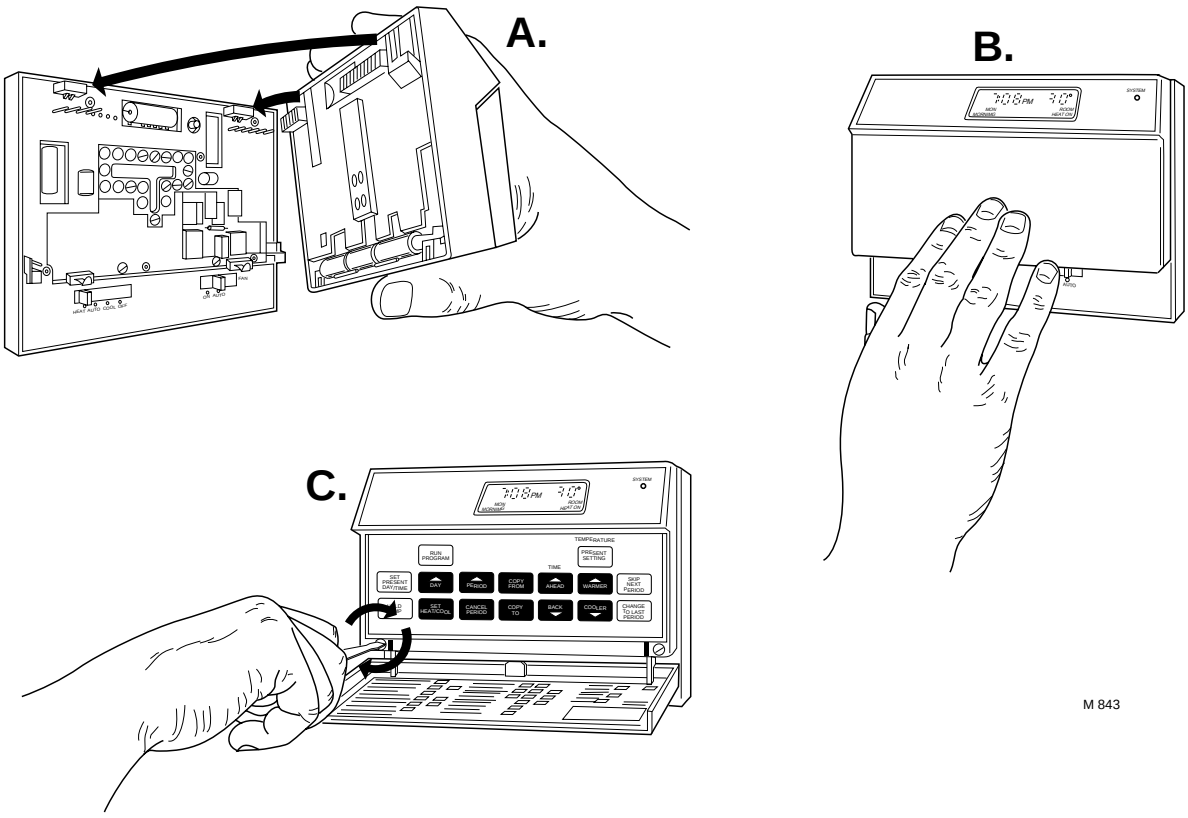
Press SET PRESENT DAY/TIME.

Press DAY to set the current day. Each press of the DAY key advances the display one day.

Press TIME AHEAD or BACK to set the current time.

If the display will not come on—
- — check the mounting of thermostat to subbase. If loose or misaligned, remove thermostat and reinstall on the subbase, making sure it is firmly attached.
- — check to see that heat or cool system power is on.
- — check voltage between R and C; it should be 24 to 30 Vac.

Fig. 17—Mounting thermostat on subbase.



Checkout

HEATING

Move the system switch to HEAT and the fan switch to AUTO. Press WARMER key until the setting is about 10° F [6° C] above room temperature. Heating should start (both stages if multistage), and the fan should run (may be a short delay on forced air systems). Press cooler key until the setting is about 10° F [6° C] below room temperature. The heating equipment should shut off, followed by the fan.

NOTE: On an AUTO changeover thermostat, the cooling temperature must be set at least 3° F [2° C] above the heating temperature, or display will flash.

COOLING

CAUTION

Do not operate cooling if outdoor temperature is below 50° F [10° C]. Refer to manufacturer's recommendations.

NOTE: When cooling setting is changed, thermostat will wait up to five minutes before turning on the cooling equipment. This delay is to protect the compressor.

Move the system switch to COOL and the fan switch to AUTO. Press COOLER key until the setting is about 10° F [6° C] Below room temperature. The cooling equipment and fan should start (both stages if multistage). Press WARMER key until the setting is about 10° F [6° C] above room temperature. The cooling equipment and fan should stop.

NOTE: On an AUTO changeover thermostat, the heating temperature must be set at least 3° F [2° C] below the cooling temperature, or display will flash.

FAN

Move the system switch to OFF, and the fan switch to ON. The fan should run continuously. When the fan switch is in the AUTO position, fan operates directly with the thermostat call for cooling and also with the thermostat call for heating.

INSTALLER SELF-TEST (OPTIONAL)

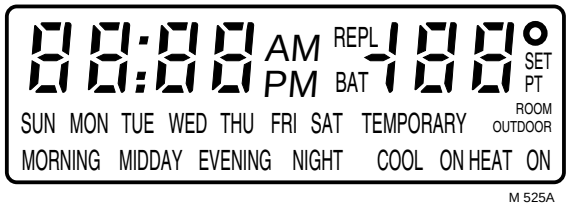
IMPORTANT:

1. *Thermostat must have ac power to perform self-test. Relays will not toggle, codes will not be present and thermostat will not manually exit self-test without ac power.*
2. *Five-minute time delay on cooling does not function during self-test.*

Perform the following test as a check of all thermostat functions. If thermostat does not respond as indicated, thermostat must be replaced.

1. Press AHEAD and BACK keys at the same time. While holding keys down, all segments of the display should be on (see Fig. 18).

Fig. 18—All segments on display.



2. Set the system switch to OFF. Press and release AHEAD and BACK and PRESENT SETTING keys at the same time to enter self-test.

3. Press each key as listed below, and look for responses listed as key is held down and released.

System Switch Position	Press This Key	Look For This Response: Key Down	Look For This Response: Key Released
OFF	CHANGE TO LAST PERIOD	03	Blank
	SKIP NEXT PERIOD	07	Blank
	PRESENT SETTING	15	Blank
COOL or AUTO (with fan in AUTO)	PRESENT SETTING	15	1st stage cooling, fan and SYSTEM LED on.
	PRESENT SETTING	15	2nd stage cooling also on.
	PRESENT SETTING	15	2nd stage cooling off.
	PRESENT SETTING	15	1st stage cooling, fan and SYSTEM LED off.

NOTE: If single-stage cooling system, press key twice instead of 4 times; once to turn cooling, fan and SYSTEM LED on, second time to turn off.

System Switch Position	Press This Key	Look For This Response: Key Down	Look For This Response: Key Released
OFF	WARMER	06	Blank
	COOLER	02	Blank
	AHEAD	05	Blank
	BACK	04	Blank
	COPY FROM	01	Blank
	COPY TO	00	Blank
(CHECK EACH POSITION)	PERIOD	12	See note (A).
OFF	CANCEL PERIOD	08	Blank
	DAY	13	Microprocessor mask no. and revision no.
	SET HEAT/COOL	09	Blank
	SET PRESENT DAY/TIME	14	Blank
HEAT or AUTO (1)	SET PRESENT DAY/TIME	14	1st stage heating and SYSTEM LED on.
	SET PRESENT DAY/TIME	14	2nd stage heating also on.
	SET PRESENT DAY/TIME	14	2nd stage heating off.
	SET PRESENT DAY/TIME	14	1st stage heating and SYSTEM LED off.

NOTE: If single-stage heating system, press key twice instead of 4 times; once to turn heating and SYSTEM LED on, second time to turn off.

OFF	HOLD TEMP	10	Blank
	RUN PROGRAM	11	Normal operating display.

END SELF-TEST

(1) For electric heat fan operation—The fan will operate with the heating system when fan switch is in AUTO.

(A) HEAT displayed when system switch is in HEAT, COOL when in COOL, HEAT and COOL when in AUTO, neither when in OFF. Also, a four-digit code is displayed, with each digit explained below.

First Digit	Cycle Rate Setting (cph at 50% on time for stage 1 on 1-heat models, stage 2 on 2-heat models)
0	1
1	3
2	9
3	6

Third Digit	Manual or Auto Changeover	System Switch Position
0	Manual	HEAT or OFF
1	Auto	HEAT or OFF
3	Auto	AUTO
4	Manual	COOL
5	Auto	COOL

Second Digit	Stages of	
	Heat	Cool
0	2	1
1	2	2
2	1	1
3	1	2
4	0	2
5	1	0
6	2	0

Fourth Digit	Degrees	Clock (hrs)	System Switch Position
0	F	12	COOL, AUTO or OFF
1	F	24	COOL, AUTO or OFF
2	F	12	HEAT
3	F	24	HEAT
4	C	12	COOL, AUTO or OFF
5	C	24	COOL, AUTO or OFF
6	C	12	HEAT
7	C	24	HEAT

Programming the Thermostat

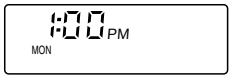
STEP 1
ENTER THE DAY AND TIME

This thermostat can be programmed either on wall or in hand. See page 8 to find out how to remove the thermostat from the subbase.

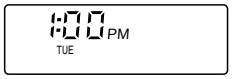
Always press the keys with fingertip or similar blunt tool. Sharp instruments like a pen or pencil point can damage the keyboard.

NOTE: Check the glossary, page 30 for definitions of unfamiliar words.

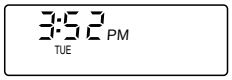
Press and release. The display shows 1:00 PM Mon.



Press and hold until the current day appears in the display.



Press and hold until the current time appears in the display. Be sure AM or PM appears as desired.



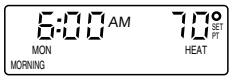
This completes setting the current day and time. Go on to Step 2.

STEP 2
SET THE PROGRAM TIMES AND TEMPERATURES FOR ONE DAY

Choose a day to program first. Monday is used in the examples. Start by programming the MORNING time and temperatures. The thermostat requires a MORNING program every day. Set additional programs as desired.

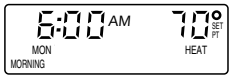
PERIOD

Press and release. Note that the display shows MORNING and the preprogrammed time and temperature.



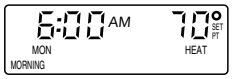
SET HEAT/COOL

If the display reads COOL, press and release to switch to HEAT.



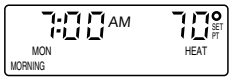
DAY

Press and hold until MONDAY (or the desired day) appears in the display.



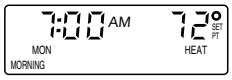
AHEAD
BACK

Press and hold until the display shows the time that the temperature should be at the comfort setting.



WARMER
COOLER

Press and hold until the display shows the desired heating temperature.



If the display flashes while holding down TEMPERATURE WARMER or COOLER, the setting limit has been reached. If thermostat is an autochangeover model, the heating temperature must be at least 3 degrees below the air conditioning temperature. For example, if the cooling setting is 75° F, the maximum heating setting is 72° F. To set a higher heating temperature, first raise the cooling setting.

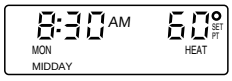
Program the MIDDAY time and heating temperature if desired.

PERIOD

Press and release. The display shows MIDDAY, but no time or temperature.

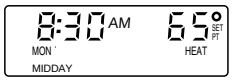
AHEAD
BACK

Press and hold until the display shows the time to start the energy saving period.



WARMER
COOLER

Press and hold until the display shows the desired temperature.

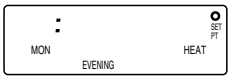


NOTE: It is possible to *cancel* any period showing on the display except MORNING by pushing the CANCEL PERIOD key. To move to the next period while programming, simply press the PERIOD key again.

Program the EVENING time and temperature, if desired.

PERIOD

Press and release. The display shows EVENING but no time or temperature.



AHEAD

BACK

Press and hold until the display shows the time the temperature should be at the comfort setting.

WARMER

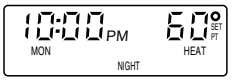
COOLER

Press and hold until the display shows the desired heating temperature.

Program the NIGHT time and temperature, if desired.

PERIOD

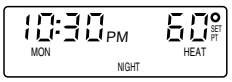
Press and release. The display shows NIGHT and the preprogrammed time and temperature.



AHEAD

BACK

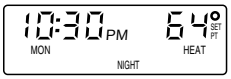
Press and hold until the display shows the time to start the energy saving period.



WARMER

COOLER

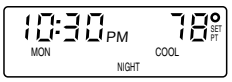
Press and hold until the display shows the desired heating temperature.



Set the cooling temperatures for all the periods programmed. The program times are the same for both heating and cooling. Only the cooling temperatures need to be programmed if programming has been completed for heating. If you change program times for cooling, you are also changing the times for heating.

SET HEAT/COOL

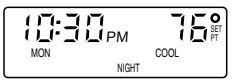
Press and release. The display shows COOL, the preprogrammed cooling temperature and the programmed start time for NIGHT.



WARMER

COOLER

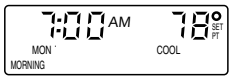
Press and hold until the display shows the desired cooling temperature for NIGHT.



If the display blinks while holding down TEMPERATURE WARMER or COOLER, the setting limit has been reached. If thermostat can switch automatically between heating and cooling, the heating temperature must be at least 3 degrees F below the air conditioning temperature. For example, if the heating setting is 72° F, the minimum cooling set-ting is 75° F. To set the cooling temperature lower, first lower the heating setting.

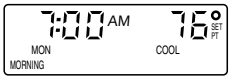
PERIOD

Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for MORNING.



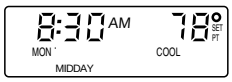
WARMER
COOLER

Press and hold until the display shows the desired cooling temperature for MORNING.



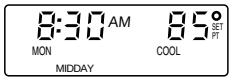
PERIOD

Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for MIDDAY.



WARMER
COOLER

Press and hold until the display shows the desired cooling temperature for MIDDAY.

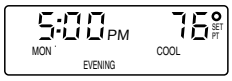


PERIOD

Press and release. The display shows the preprogrammed cooling temperature and the programmed start time for EVENING.

WARMER
COOLER

Press and hold until the display shows the desired cooling temperature for EVENING.



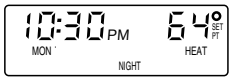
This completes the program schedule for one day. Go to Step 3 to copy this program to additional days.

STEP 3
COPY THE PROGRAM TO THE DESIRED DAYS

It is possible to copy the program for one day to any other day or combination of days. The new program will replace any program already set in the day selected.

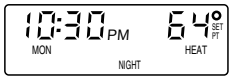
PERIOD

If necessary, press and release to enter the programming mode.



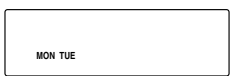
DAY

Press and hold until the day containing the program to be copied shows in the display.



COPY FROM

Press and release. The day to be copied will show, and the next day will flash, in the display.

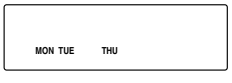


COPY TO

Press and release to copy the program into the day that is flashing in the display. Note that the *next* day now starts to flash.

DAY

Press and release if it is not desired to copy into the day that is flashing. Note that the *next* day now starts to flash.

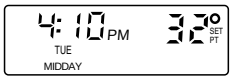


NOTE: The display will show 32° F instead of the current temperature until the thermostat is mounted on the subbase and the system is powered.

COPY TO

Press and release the COPY TO key again to select the day that is flashing, or the DAY key to bypass it.

Continue until all desired days are showing in the display and *are not flashing.*



If an error is made in copying, start over by pressing COPY TO key repeatedly until all days are shown (NOT flashing); press COPY TO key once more.

RUN PROGRAM

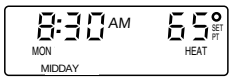
Press and release to copy the program into all the days selected.

STEP 4
SET THE SCHEDULES AND TEMPERATURES FOR THE REMAINING DAYS

Use the procedures described in Steps 2 and 3 and summarized in this step to program the remaining days.

PERIOD

Press and release to enter the programming mode.



DAY

Press and hold until the day desired to program shows on the display.

SET HEAT/COOL

If COOL shows on the display, press and release to switch to HEAT.

AHEAD
BACK

Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the heating temperature.

WARMER
COOLER

PERIOD

Press and release the PERIOD key to step through the remaining time periods. Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the heating temperature for each time period.

AHEAD
WARMER
BACK
COOLER

SET HEAT/COOL

Press and release so COOL shows on the display.

PERIOD

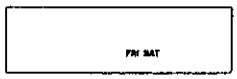
Press and release the PERIOD key to step through the time periods, and use the WARMER/COOLER keys to set the cooling temperature for each period.

WARMER
COOLER

This completes the time and temperature program for another day. Copy it into additional days if desired.

COPY FROM

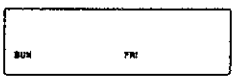
Press and release the COPY FROM key to enter the copy mode. The next day flashes on the display.



COPY TO

DAY

Press and release the COPY TO key to select the day that is flashing, or the DAY key to bypass it.

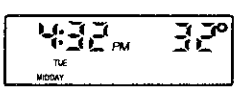


COPY TO

Continue, using the COPY TO key to bring up the next day, followed by COPY TO to select, or DAY to bypass the day, until all desired days are selected.

RUN PROGRAM

Press and release RUN PROGRAM to complete the copy.



Repeat Step 4 as needed until all days are programmed.

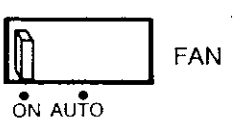
NOTE: The display will show 32° F until the thermostat is mounted on the subbase and the system is powered.

STEP 5
SET THE SYSTEM AND FAN SWITCHES ON THE SUBBASE.

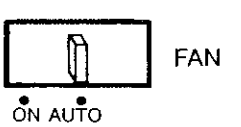
Depending on thermostat model, some of the switch positions shown may not be available. Note the positions provided on subbase, then set the switch(es) as desired.

First set the fan switch.

FAN ON: The fan runs continuously. Use for improved air circulation during special occasions or for more efficient electronic air cleaning.

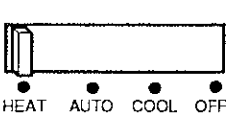


FAN AUTO: Normal setting for most homes and businesses. The fan goes on and off with the air conditioner in summer. In winter, the fan on most systems starts a few minutes after the furnace comes on. It stops a few minutes after the furnace goes off. The fan starts and stops with the furnace in some electric heat systems.

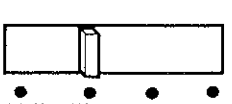


Then set the system switch.

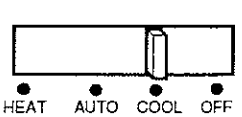
HEAT: The thermostat controls the heating system.



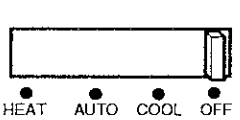
AUTO: The thermostat controls either the heating or air conditioning system, depending on room temperature.



COOL: The thermostat controls the air conditioning system.



OFF: Both the heating and air conditioning systems are off.



This completes the programming of the thermostat.

Now, read on to learn about the operating flexibility that makes this thermostat *the smart choice*.

If it was removed from the wall to program, replace it following the procedure on page 17.

Operating the Thermostat

TEMPORARILY CHANGING THE PROGRAM

These features allow customizing the program for those times when someone comes home early, is working late or planning to be out for the evening.

Changes made with these keys are active for one program period and then are canceled.

To keep the current temperature through the next program period:

Press and release. The name of the period to be skipped will flash in the display until the start time of the skipped period. During the skipped period, the display will flash "temporary" to show that the programmed temperature for this period is not being used.

To go back to the temperature of the pre-vious program period:

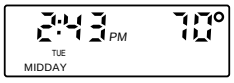
Press and release. The display will show the name of the previous period and flash "temporary" until the next regularly scheduled period starts.

To temporarily raise or lower the temperature for the current period only:

Press and hold until the desired temperature is reached. The display will flash "temporary" until the next programmed time period starts.

To change back:

Press and release to cancel any of the tem-porary settings.



REPROGRAMMING THE THERMOSTAT

If schedule changes or a different temperature is wanted, update any setting without affecting the rest of the program.

Press and hold until the desired time period shows on the display.

Press and hold until the desired schedule day shows on the display.

Press and hold the Time or Temperature keys until the display shows the desired new program.

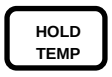
Copy the new program into other days, if desired. When copying a program, all the times and temperatures for that day are copied.

Press and release. The next day will flash on the display. Press COPY TO to copy into, or DAY to bypass, the day. Continue until the program has been copied into all desired days.

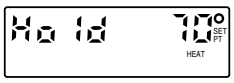
Press and release to return to normal operation.

HOLDING A TEMPERATURE FOR EXTENDED ABSENCE

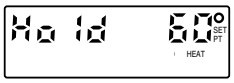
This feature is particularly useful when going on vacation or other extended absence. It does not cancel the program.



Press and release.



Press and hold to change the temperature setting. After a few seconds, the display will show the current temperature.



Press and release to check the temperature setting.

Press and release to cancel manual control.

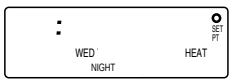
CANCELING PROGRAM SETTINGS

The thermostat requires time and temperature settings in the MORNING time period for each day, but any of the others can be canceled. Each time period for each day must be canceled separately.

Press and hold until the desired time period shows on the display.

Press and hold until the desired day shows on the display.

Press and release to cancel the time and temperature settings for that time period. Both the heating and cooling temperatures will be canceled.



Use the copy function to cancel the program from other days, but remember that *all* the programs will be copied, not just the cancellation.

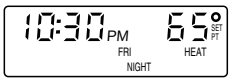
Press and release to return to normal operation.

CHECKING THE PROGRAM TIMES AND TEMPERATURES

If desired, check all the stored settings without affecting the permanent program.

PERIOD

Press and hold until the desired period shows on the display. The start time and temperature setting will appear on the display.



DAY

Press and release to display the next day time and temperature for that period.

RUN PROGRAM

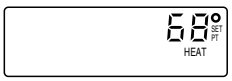
Press and release to return to normal operation.

CHECKING THE CURRENT TEMPERATURE SETTING

Press a single key to compare actual room temperature to the setting at any time.

PRESENT SETTING

Press and release. The display will show the current temperature setting for several seconds, then revert to the room temperature.



During recovery from energy savings, the setting displayed will not match the programmed setting. This is because the thermostat gradually changes the temperature setting during recovery to provide maximum comfort combined with most efficient use of the heating or cooling equipment.

Operation

ADAPTIVE INTELLIGENT RECOVERY™ OPERATION

Adaptive Intelligent Recovery™ is the Honeywell trademark for the way the T8621 controls the heating and cooling equipment during recovery from an energy savings setting to a comfort setting. During recovery, the control point changes gradually rather than jumping from the energy savings setting to the comfort setting all at once. This provides additional energy savings.

In both heating and cooling, the thermostat monitors recovery each day and adjusts the next day recovery start time. This ensures that the building is at the desired temperature at the programmed time, regardless of the outdoor temperature. Recovery time varies depending on the weather conditions and the building heating/cooling system.

The advantages are:

- Comfort setting is achieved at the programmed time and maintained regardless of weather conditions; occupants come home and wake up to comfort.
- Drafts from low temperature discharge air are minimized during occupied periods.
- Comfort and energy savings can be achieved in both heating and cooling.

When Adaptive Intelligent Recovery™ is Used

Adaptive Intelligent Recovery™ is used during recovery from energy savings. It is bypassed when the setpoint is changed and when the CHANGE TO LAST PERIOD, SKIP NEXT PERIOD or HOLD TEMP key is pressed. If Adaptive Intelligent Recovery™ is bypassed, the system operates the stages of equipment like a conventional thermostat.

WHAT TO EXPECT DURING RECOVERY FROM ENERGY SAVINGS IN HEATING

The T8621 controls the heating equipment based on the indoor sensed temperature, which is a combination of air temperature and wall temperature.

THERMAL PERFORMANCE WITH T8621

During severe weather, the T8621 actually controls closer to the setpoint than a conventional thermostat. This is because the heat anticipator is replaced by two electronic control strategies—cycling by heat anticipation and proportional plus integral control.

Electronic cycling by heat anticipation acts like a traditional heat anticipator, except that it never needs adjusting for various control circuit load currents. It cycles the heating system off slightly before the room temperature reaches the setpoint to keep heat remaining in the ductwork from overheating the room.

In severe weather, a conventional thermostat with a heat anticipator tends to turn off the thermostat too soon, so the effective control point is somewhat below the setpoint. In very cold weather, the difference between setpoint and effective control point may be 5° or 6° F [2° or 3° C] with a conventional thermostat. This phenomenon is called *droop*.

Proportional plus integral action eliminates droop by adjusting the on-time of the stage that is cycling longer or shorter until the control point matches the setpoint. The T8621 maintains space temperature within one degree of setpoint, when the temperature has stabilized after an energy savings period.

This *zero droop* performance of the T8621 provides improved occupant comfort and energy savings. Occupants do not need to continually adjust thermostat settings to maintain desired temperature, even during severe weather.

MINIMUM-OFF TIMING

A minimum-off timer in the T8621 ensures that the compressor will not come on again for at least five minutes after it turns off. The minimum-off timer is triggered when the compressor goes off, and when the system switch is moved. If the compress or turns off when the setpoint is changed or the CHANGE TO LAST PERIOD key is pressed, then the minimum-off timer is triggered. The minimum-off timer operates during only cooling.

Troubleshooting

SYMPTOM	POSSIBLE CAUSE	ACTION
ROOM TEMPERATURE DISPLAY IS 32˚F	NO ac POWER TO THERMOSTAT	CHECK POWER TO FURNACE OR AIR CONDITIONER. –ON-OFF SWITCH –FUSE OR CIRCUIT BREAKER –LOOSE 24 V CONNECTION –AT THERMOSTAT –AT FURNACE /AIR CONDITIONER –INCORRECT WIRING –CHECK WIRING DIAGRAM
FURNACE OR AIR CONDITIONER WON'T OPERATE	NO ac POWER TO THERMOSTAT	CHECK POWER TO FURNACE OR AIR CONDITIONER. –ON-OFF SWITCH –FUSE OR CIRCUIT BREAKER –LOOSE 24 V CONNECTION –AT THERMOSTAT –AT FURNACE /AIR CONDITIONER –INCORRECT WIRING –CHECK WIRING DIAGRAM
	THERMOSTAT INOPERATIVE	CONDUCT SELF-TEST; SEE CHECKOUT.
	PRESENT SETTING TOO LOW/HIGH	ADJUST TEMPERATURE BY PUSHING WARMER/ COOLER KEYS.
	SYSTEM SWITCH ON THERMOSTAT IN WRONG POSITION	RESET THERMOSTAT SYSTEM SWITCH.
	MINIMUM-OFF TIMES IN THERMOSTAT IN OPERATION ON COOLING	WAIT 5 -10 MIN. OR USE SELF-TEST IN THERMOSTAT. SEE CHECKOUT.
	INCORRECT WIRING	CHECK CIRCUIT DIAGRAM.
	FURNACE OR AIR CONDITIONER INOPERATIVE	CONSULT FURNACE OR AIR CONDITIONER INSTRUCTIONS.
PARTIAL DISPLAY	INOPERATIVE THERMOSTAT	REPLACE THERMOSTAT.
NO DISPLAY	NO POWER TO THERMOSTAT	CHECK THAT HEAT OR COOL SYSTEM POWER IS ON.
	THERMOSTAT MOUNTED INCORRECTLY ON BASE	SEE INSTALLATION INSTRUCTIONS FOR CORRECT MOUNTING.
PRESENT SETTING APPEARS INACCURATE	THERMOSTAT IS IN RECOVERY MODE	• NORMAL OPERATION THERMOSTAT TURNS ON HEATING/COOLING EARLY TO MEET TEMPERATURE SETTING AT PROGRAMMED TIMES. • RECOVERY CAN BE ENDED BY PUSHING WARMER/ COOLER KEYS.
ROOM TEMPERATURE DISPLAY APPEARS INACCURATE	THERMOSTAT HAS SEPARATE REMOTE-MOUNTED SENSOR	• THERMOSTAT IS CONTROLLED BY TEMPERATURE SENSED AT REMOTE SENSOR LOCATION. • CHECK TEMPERATURE AT REMOTE SENSOR LOCATION. • MAKE SURE WIRING FROM THERMOSTAT LOCATION TO REMOTE SENSOR LOCATION IS IN GOOD CONDITION.
THERMOSTAT TEMPERATURE NEEDS TO BE ADJUSTED ON A REGULAR BASIS	WARMER/COOLER KEYS BEING USED TO ADJUST TEMPERATURE	REPROGRAM THERMOSTAT TO MAKE PERMANENT CHANGE IN PROGRAM. WARMER/COOLER KEYS ARE TEMPORARY UNLESS PERIOD KEY IS PRESSED FIRST.
PROGRAM IS LOST DUE TO POWER OUTAGE OR DISPLAY GOES BLANK WHEN POWER IS TURNED OFF	BATTERIES ARE INCORRECTLY INSTALLED	REMOVE AND REPLACE PER MARKINGS ON THERMOSTAT.
	BATTERIES ARE DEAD	REPLACE BATTERIES.
DISPLAY FLASHES WHILE PROGRAMMING	IMPROPER PROGRAM SEQUENCE	CHECK PROGRAMMING INSTRUCTIONS FOR CORRECT PROGRAM SEQUENCE.
	AUTOMATIC THERMOSTAT HEATING OR COOLING TEMPERATURE CAN NOT BE SET CLOSER THAN 3°F	SET HEATING AND COOLING TEMPERATURES 3°F OR MORE APART.
DISPLAY FLASHES DURING OPERATION	PROGRAMMING HAS BEEN LOST BECAUSE OF A POWER OUTAGE	REPROGRAM ACCORDING PROGRAMMING INSTRUCTIONS (MAKE SURE BATTERIES ARE INSTALLED).

M5234

Glossary

Comfort temperature
The temperature desired when active and occupying the building.

Energy-saving temperature
The lower (heating) or higher (cooling) temperature that allows savings on heating and cooling costs when asleep or away. Also called the setback (heating) or setup (cooling) temperature.

Preprogrammed schedule
This is the schedule programmed into the thermostat at the factory. It sets a night program that provides energy savings when owner sets no program, or if personal program is lost for any reason. The program, which is the same for all days of the week, is:

Period	Start Time	Temperature	
		Heating	Cooling
MORNING	6:00 AM	70° F	78° F
MIDDAY	——— No program ———		
EVENING	——— No program ———		
NIGHT	10:00 PM	60° F	78° F

Program
The times and temperatures owner sets to define the comfort and energy saving periods for each day schedule.

Recovery
The time when the thermostat operates the heating or air conditioning equipment to return the building from the energy saving temperature to the comfort temperature. The thermostat starts the recovery period early so the building will be at the comfort setting by the time the owner has chosen.

Setback
Reducing the temperature in the building for a set period in heating for energy savings. The lower temperature is the energy savings temperature.

Setup
Raising the temperature in the building for a set period in cooling for energy savings. The higher temperature is the energy savings temperature.

Setpoint
The thermostat temperature setting the owner selects. The thermostat turns the heating or cooling equipment on and off to maintain this temperature at the thermostat location until another temperature setting (setpoint) goes into effect.

SYSTEM light
This light glows whenever the thermostat is calling for heating or air conditioning.

Time period
One of four program periods: MORNING, MIDDAY, EVENING and NIGHT available with the Chronotherm III Thermostat (one period begins when the previous program period ends):

MORNING—The time period when the owner brings the building to a comfortable temperature to begin the day. This is the only period that must contain a time and temperature for each day.

MIDDAY—The time period when the owner can setback heating or setup the cooling temperature for daytime energy savings if the building is unoccupied.

EVENING—The time period when the owner wants the building at a comfortable temperature for evening activities after daytime energy savings.

NIGHT—The time period when the owner can setback heating or setup the cooling temperature for energy savings because family members are asleep or the building is unoccupied. Often a NIGHT energy savings temperature is set only for the heating season so family members can sleep cool in summer.

Table of Contents

page
Specifications 2
Ordering Information 2
Selection/Application 5
Installation 7
Compatibility 7
Location 7
Mounting Subbase 8
Mounting Remote Temperature Sensor 8
Wiring 9
Adjusting Cycle Rate 15
Time/Temperature Conversion 15
Fan Operation Option Switch 16
Installing Batteries 16
Power Outages 16
Mounting the Thermostat 16
Setting Day and Time 16
Checkout 17
Heating 17
Cooling 17
Fan 17
Installer Self-Test 18
Programming the Thermostat 19
Enter the Day and Time 19
Set the Program Times and Temperatures for One Day 20
Copy the Program to the Desired Days 22
Set the Schedules and Temperatures For the Remaining Days 23
Set the System and Fan Switches on the Subbase‘ 24
Operating the Thermostat 25
Temporarily Changing the Program 25
Reprogramming the Thermostat 25
Holding a Temperature for Extended Absence 26
Canceling Program Settings 26
Checking the Program Times and Temperatures 27
Checking the Current Temperature Setting 27
Operation 28
ADAPTIVE INTELLIGENT RECOVERY™ Operation 28
What to Expect During Recovery from Energy Savings in Heating 28
Thermal Performance with T8621 28
Minimum-Off Timing 28
Troubleshooting 29
Glossary 30

This equipment is a Class B digital apparatus which complies with Canadian Radio Interference Regulations, CRC c.1374.

Honeywell

Home and Building Control
Honeywell Inc.
1985 Douglas Drive North
Golden Valley, MN 55422

Home and Building Control
Honeywell Limited—Honeywell Limitée
740 Ellesmere Road
Scarborough, Ontario
M1P 2V9

Printed in U.S.A.